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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,283	08/22/2006	Akihiro Suzuki	1680/48	8072
25297 7590 10/24/2011 JENKINS, WILSON, TAYLOR & HUNT, P. A. 3100 Tower Blvd. Suite 1200 DURHAM, NC 27707				
EXAMINER SCHIFFMAN, BENJAMIN A				
ART UNIT		PAPER NUMBER		
1742				
MAIL DATE		DELIVERY MODE		
10/24/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/590,283

Applicant(s)

SUZUKI, AKIHIRO

Examiner

BENJAMIN SCHIFFMAN

Art Unit

1742

Period for Reply
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2011 and 08 July 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 4-9, 11-14, 16, 18, 19 and 25-31 is/are pending in the application.
- 5a) Of the above claim(s) 11-14, 16, 18, 19 and 28-31 is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 4-9 and 25-27 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 22 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-942)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 08/18/2011 and 07/08/2011
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

1. The papers submitted on 8 July 2011 and 18 August 2011, amending claims 1, 4, 6, 8, 9, 25 and 26, canceling claims 1, 5, 17 and 20-24, and adding claims 27-31, are acknowledged.

Election/Restrictions

2. Newly submitted claims 28-31 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:
3. They appear to be related to the non-elected invention of claims 11-14, 16, 17 and 19.
4. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 28-31 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. Claims 27, 8, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2003-16615 A) in view of Ohkoshi et al. (US 6,497,952 B1), Leenslag et al. (*Resorbable Materials of Poly(L-lactide). V. Influence of Secondary Structure on the Mechanical Properties and Hydrolyzability of Poly(L-lactide) Fibers Produced by a Dry-Spinning Method*) and Appel et al. (US 4,340,563).
8. Regarding claim 27, Suzuki discloses a method for manufacturing drawn filament, comprising the steps of drawing an original filament to a draw ratio of 1000 times or more by tension of 1 MPa or less per single filament while to heating with an infrared beam (**see abstract and para. 11**), wherein the beam diameter is 4.3 mm (**see para. 41**), which when aimed at a fiber would be within a maximum of 2.15 mm, i.e. the radius, in an up and down axial direction from the center of the filament, which overlaps the claimed range (**see MPEP 2144.05**). Additionally, Suzuki teaches that the process can be applied to natural fibers, such as silk, which are inherently biodegradable (**see para. 15**).
9. Suzuki does not does not appear to expressly disclose a plurality of beams.
10. However, Ohkoshi discloses a method of applying a infrared beam to a fiber in order to heat and draw the fiber, where the beam is directed through a lens to control the length of irradiated fiber, between 0.1 and 100 mm (**see col. 5 l. 42-48**), and that the beam is reflected back at the fiber, i.e. a plurality of beams, (**see col. 7 l. 43-50**).

11. At the time of invention, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the method of Suzuki to include the beam control of Ohkoshi, in order to control the size of the irradiated region of the thread and control the temperature of the thread during drawing. Additionally one of ordinary skill in the art would be motivated to optimize the size and number of beams depending on known process variables, such as throughput, fiber composition, and beam power. Further, at the time of invention, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the method of Suzuki to include biodegradable filaments, because the specific type of filament is an intended use of the final filament, and a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Further, a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

12. Further, Suzuki does not appear to expressly disclose that the biodegradable fibers are synthetic.

13. However, Leenslag discloses hot drawing of a synthetic biodegradable polymer, e.g., poly(L-lactide) (PLLA), filaments (see pp. 2830-2831 EXPERIMENTAL).

14. At the time of invention, it would have been *prima facie* obvious to one of ordinary skill in the art to apply the method of Suzuki to the fibers of Leenslag, because it is known to hot draw PLLA filaments and hot drawing the filaments with the method of Suzuki would improve the PLLA filaments in the same way in which the synthetic filaments and natural filaments of Suzuki are improved.

15. Finally, modified Suzuki does not appear to expressly disclose that the filament is delivered with a flowing gas in the blowing duct.

16. However, Appel discloses a method of forming nonwoven webs comprised of filaments (title/abstract) wherein the fibers are drawn by the action of flowing air through a novel/duct (4:22-44 and FIG. 1-3).

17. At the time of invention, it would have been *prima facie* obvious to one of ordinary skill in the art to provide the flowing air of Appel in the method of Suzuki, in order to apply a controllable amount of tension, and thus diameter, to the fibers during the drawing process (Appel 4:45-64).

18. Regarding claim 8, Suzuki discloses that multiple filaments are drawn simultaneously in the same beam (see para. 90).

19. Regarding claims 25 and 26, Leenslag discloses hot drawing of poly(L-lactide) (PLLA) filaments (see pp. 2830-2831 EXPERIMENTAL).

20. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2003-16615 A) in view of Ohkoshi et al. (US 6,497,952 B1), Leenslag et al. (*Resorbable Materials of Poly(L-lactide). V. Influence of Secondary Structure on the Mechanical Properties*

and Hydrolyzability of Poly(L-lactide) Fibers Produced by a Dry-Spinning Method) and Appel et al. (US 4,340,563) as applied to claim 27 above, further in view of Davis et al (US 4,101,525).

21. Suzuki does not appear to expressly disclose further heating and drawing the drawn filament in heating and drawing zones.

22. However, Davis discloses a method of drawing a filament (**see abstract**) wherein the drawn filament is subjected heating and drawing in zones (**see col. 15 l. 22 to col. 16 l. 6**).

23. At the time of invention, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the method of Suzuki to include further drawing and heating of Davis, in order to improve the properties of the final filament (**see col. 13 l. 61 to col. 14 l. 52**).

24. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (JP 2003-16615 A) in view of Ohkoshi et al. (US 6,497,952 B1), Leenslag et al. (*Resorbable Materials of Poly(L-lactide). V. Influence of Secondary Structure on the Mechanical Properties and Hydrolyzability of Poly(L-lactide) Fibers Produced by a Dry-Spinning Method*) and Appel et al. (US 4,340,563) as applied to claim 1 above, further in view of Tanaka et al. (US 5,506,041).

25. Regarding claim 9, Suzuki does not appear to expressly disclose collecting the filaments on a running conveyor.

26. However, Tanaka discloses a method of forming biodegradable filaments (**see abstract**) that are collected onto a conveyor (**see col. 9 l. 46-68**).

27. At the time of invention, it would have been *prima facie* obvious to one of ordinary skill in the art to modify the method of Suzuki to include collecting the filaments on a conveyor of

Tanaka because, fibers are commonly collected on conveyors in order to form non-woven fabrics as is well known in the art.

Response to Arguments

28. Applicant's arguments with respect to claims 4-9 and 25-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **BENJAMIN SCHIFFMAN** whose telephone number is

(571)270-7626. The examiner can normally be reached on Monday through Thursday from 9AM until 4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, CHRISTINA JOHNSON can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BENJAMIN SCHIFFMAN/
Examiner, Art Unit 1742

/Christina Johnson/
Supervisory Patent Examiner, Art Unit 1742